

Nile Basin Development Challenge Community Engagement Report: Jeldu



Jeldu woreda, West Shoa, Ethiopia
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Background Information

The Nile Basin Development Challenge (NBDC) is implemented by a consortium led by the International Livestock Research Institute and the International Water Management Institute. It is funded by the CGIAR Challenge Program on Water and Food. The NBDC aims to improve the resilience of rural livelihoods in the Ethiopian highlands through a landscape approach to rainwater management.

The NBDC comprised five linked projects examining: 1. Learning from the past; 2. Developing integrated rainwater management strategies, 3. Targeting and scaling out of rainwater management innovations, 4. Assessing and anticipating the consequences of innovation in rainwater management systems; and 5. Catalysing platforms for learning, communication and coordination across projects. The project undertook work in three study sites: Jeldu, Diga and Fogera woredas.

The group working on ‘developing integrated rainwater management strategies’ organised ‘community engagement exercises’ in each woreda to identify key NRM challenges with the aim of informing innovation platform action research.

The community engagement process was led by Beth Cullen (ILRI). Alemayehu Belay and Aberra Adie played key roles in terms of logistics, facilitation, translation and note-taking. The following report documents the process and results.

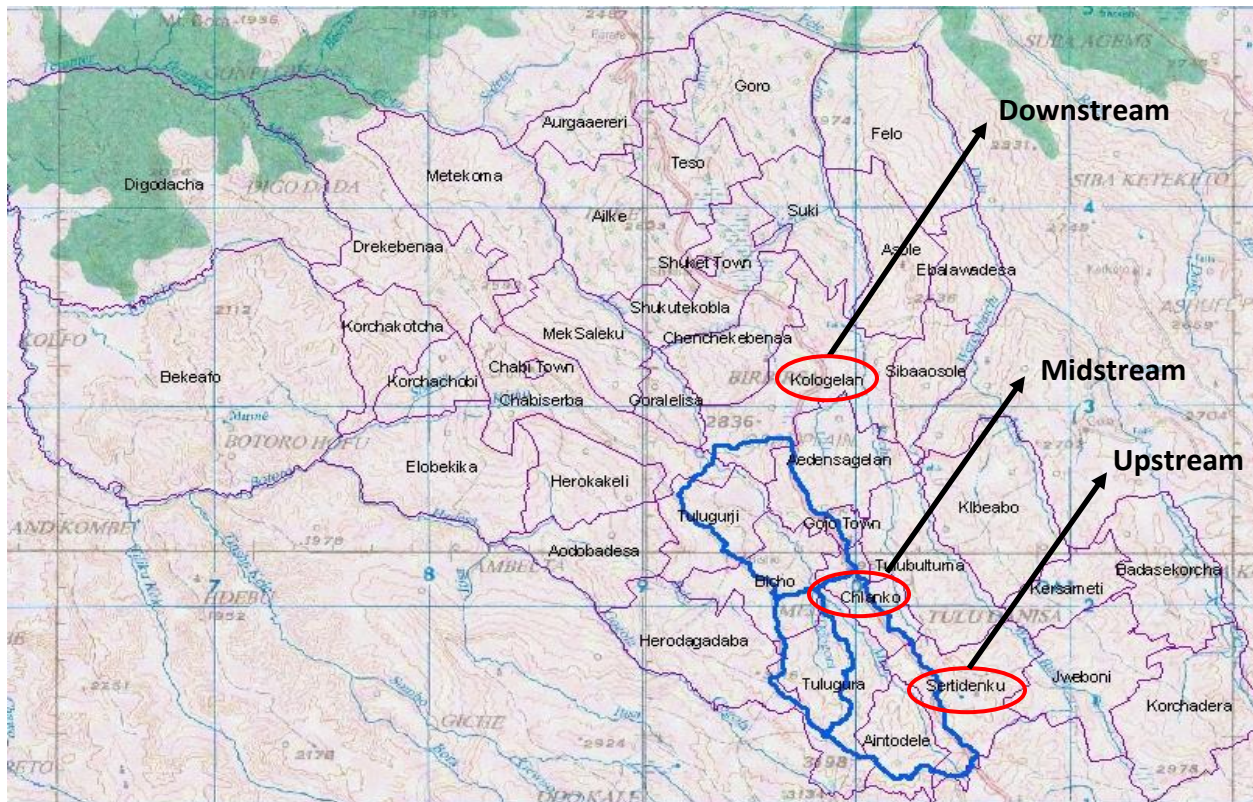
Rationale

A key issue in fostering change in rural systems is the power imbalance between farming communities and decision makers. Although it is increasingly acknowledged that approaches to NRM so far have been top down, there is still an issue of how to engage with local communities and bring them into the process. It is critical to address this because farmer participation is vital for the success of NRM and RWM activities.

The aim of the participatory community engagement process was to enable NBDC innovation platform facilitators to interact closely with community members, build trust and rapport and gain a more detailed understanding of local issues and perspectives in addition to those identified by the NBDC baseline research (Ludi et al. 2013). Information about the major NRM constraints facing community members were fed back to innovation platform members and used to inform ongoing discussions.

Approach

Three kebeles were chosen to represent upstream, midstream and downstream locations: Seriti, Chilanko and Kolu Galan respectively. Development Agents (DAs) from the kebeles selected 16 participants: 8 female and 8 male of different ages and socio-economic status.



The community engagement exercises began in Seriti kebele on 30th January, and continued in Kolu Galan and Chilanko kebeles on 1st and 2nd February 2012. Participatory methods were used to enable community members to identify their key resources and land and water management challenges, the participants were split into two groups according to gender. The male and female groups in each kebele were asked to rank the top five resources and problems. The main problems identified by the male and female groups were then collectively ranked.

This joint ranking exercise was then followed by focus group discussions with male and female groups based on the following questions:

- What are the main causes of the problems you have prioritized?
- How long have you faced these problems and how have they changed over time?
- Who is mostly affected by these problems and why?
- What is currently being done to address these problems and by whom?
- What do you think could be done in the future to solve these problems?

The groups then fed back the outcomes of their discussions, including information about causes, current practices and solutions. It was important for participants to talk about their ideas for solutions rather than just focusing on problems.

Our schedule in Jeldu did not go to plan as there were government meetings to inform community members of plans for the 'Sustainable Land Management' campaign. Community members had been selected by DAs to participate in both our exercises and the government meetings.

Seriti Kebele - Upstream

Number of households in the kebele (excluding 'landless households) = 931

Most important resources identified by women:

Cereal crops most important, then access to water, livestock and transport. Other important resources were electricity, schools, road, potato, barley, cabbage, milk, meat, butter, fodder for livestock, onion, chickens, horses for transport

Most important resources identified by men:

Water, Enset, Crops, forest/trees, land, livestock, livestock health station, human health station, FTC

Problems identified by women:

Soil erosion, drying of streams, shortage of animal feed, bridge washed away, eucalyptus dries the soil, population increase, reduced land availability, increasing price of agricultural inputs, shortage of compost, increasing price of commodities at market (e.g. soap), reduction in tree cover, sheep pneumonia.

Problems identified by men:

Plant disease, lack of access to vegetable seeds, shortage of feed for livestock, high cost of fertilizer, deforestation, soil erosion, Landlessness (joblessness), livestock disease, lack of seeds for indigenous tree species, lack of access to improved breeds for dairy, lack of access to improved crop technologies with enough quantity.

Ranking of problems:

	Women	Men	Joint
1	Soil erosion	Soil erosion	Soil erosion
2	Drying of streams	Deforestation	Deforestation
3	Shortage of fodder	High cost of fertilizer	Shortage of fodder
4	No bridge	Shortage of fodder	Wheat disease
5	Wheat disease	Landlessness	Landlessness

1. Soil erosion

Farmers report that soil erosion has increased in recent years. Both the men and women's group mentioned that soil erosion in the kebele is related to deforestation that has taken place since 1989. Loss of trees has resulted in increased runoff and decline in soil fertility, which has also led to a decline in crop yields. Male farmers described in detail what happens after trees are cut. Women dug out the remaining tree stumps to use as fuel, which caused large depressions in the land. These holes fill with water during the rains and less water is absorbed by the soil. This results in increased runoff which removes top soil and ultimately leads to gully formation. They also mentioned that over the years the texture of the soil has become sandy. The men's group also mentioned that the decline in soil fertility was gradual, they hardly noticed it at first, but production has started to decline since the 1990s. They mentioned that a farmer who used to get five quintals of produce in the past now produces no more than two Quintals. Women believe that farming practices are also a contributing factor. Farmers crop once per year and plough the land three or four times before harvesting. Women commented that erosion problems have made production difficult even if farmers use fertilizer. Female farmers also report that the volume of water present in the landscape during the wet season has increased to such an extent that people cannot pass through certain parts of the landscape without a bridge. Certain areas are more prone to erosion than others, e.g. farmland, river banks and sloped areas.

Solutions:

Women mentioned that soil conservation structures and tree planting can help address the problems of soil erosion and deforestation. They have seen the Tigray experience on television and how the people there have changed their area. They are prepared to do the same in Jeldu, *"every man and women is happy to go and work. Nothing is worse than the problems we are facing now"*. Government is organising campaign work in Jeldu by giving training to 200 households within each kebele. This training includes experience sharing from other areas through the use of slide shows. Experts from the woreda are providing technical support. Since last year farmers have been taking trainings that focus on soil management, how to build cut-off drains and terraces, plant trees and compost. Male farmers mentioned that they are working on composting in their respective 'Geres' using either family labour or 'Wenfel'. They estimated that currently three farmers out of ten are now preparing compost. The work with soil terraces has started recently and farmers work four times a week coordinated by 'Gere' leaders. They said the plan is to continue working for one full month till they reach their target of 500ha (which has been set out by the woreda for this year). So far they said they have accomplished a 2km terracing (reached 10km by the time we visited the implementation work). Apparently the work is taking place on private land.

No payment is being made to people for the work. Farmers have been told that GIZ will provide some form of incentive but they have not yet received anything or be told what the incentives will be. Women say that they are taking inspiration from the Tigray project *"instead of begging for 40 years, we should tighten our belts and work for 40 days to bring change"*. Female farmers

expect to see changes within 1 year, they believe that vegetation will recover, crop production will increase and they will be similar to other countries. *“Everyone works as one in this region (Oromiya) - we have heard from Harar that they have succeeded and made a difference to their area”*.

The group was asked if there are any gaps they would need to be filled in the efforts they are making to reduce soil erosion. Female farmers commented that natural resource management campaigns occurred during the Derg time in the Jeldu area but were not successful due to a lack of participation. During the Derg regime selected areas were targeted but now all areas are targeted and the work takes place on a larger scale. However, the Development Agents have a huge workload and there are not enough DAs in some kebeles (e.g. no DAs in Chilanko kebele). Male farmers highlighted the lack of access to seedlings of improved forage which are expected to be planted in June on the soil bunds. They also mentioned they would like to have access to indigenous tree seedlings. There are also problems with shortage of budget and materials/tools.

2. Deforestation

The elders in the women’s group reported that when they were young the whole Jeldu area was forested, and the amount of land used for farming was smaller. There were many indigenous trees including ‘*Kombulcha*’, ‘*Koso*’ (*hygenia abyssinica*) and ‘*Tid*’ (indigenous juniper). The area was deforested over time due to the need for farmland. During the Derg period, forests were protected and one need permission to cut trees. Major changes happened to the area during the transitional period between the Derg regime and the establishment of the Federal Democratic Republic of Ethiopia under the EPRDF. During this period there was a power vacuum which meant that the previously protected forest areas were unregulated. This led to trees being cut for firewood.

Male farmers mentioned that they themselves destroyed the trees, and the consequences they are facing today are a penalty for their actions. The clearing of forests led to the expansion of farmland. Farmers continued to clear trees near areas of expanded farmland as they believed that the shade from trees affect crop production. Female participants stated that they didn’t protect the trees due to their ignorance. Farmers relate the deforestation process to the drying up of springs. They report that the climate has changed since the trees have gone, temperatures have increased, the area has become drier and both livestock and people struggle as a result. There is a shortage of firewood and they are now dependent on gathering the wood they can find and on dung collection. Women described the loss of trees as a form of bankruptcy. *“When there were trees, we used to feed from the forest, hunt wild animals and gather fruit from the trees. There is nothing left today. Even our livestock don’t even have shade to protect their skin from the burning sun”*. Young children today have no knowledge of indigenous trees.

Solutions:

Even though, most of the previous forest land has been converted into farm land, there is still an area of land in Seriti called '*Chaka Aba Jote*' (Aba Jote's forest) where farmers plant trees, mainly eucalyptus. Men's group mentioned that they are planning to start planting indigenous trees to reduce soil erosion and improve soil fertility. The challenge they are facing is access to indigenous tree seedlings. Apparently a seedling nursery is being established and GIZ is expected to strengthen it. There are plans to grow indigenous trees for firewood and to control soil erosion. Women mentioned that '*Tid*' (indigenous juniper) could be cut for sale - the wood is more expensive than eucalyptus. *Grevillea* is being introduced to the area through nurseries as a cash crop and also *Sesbania* and Tree Lucerne.

3. Shortage of fodder

The men's group mentioned that there used to be enough land both for farming and grazing. But as the population has increased the forest and grazing lands were changed into farmland. In the past farmers had enough land to leave some fallow, this enabled them to interchange farm and grazing lands annually. With the decline in soil fertility, farming started to expand to compensate for the loss in crop yield and the land available for fallowing started to become smaller. This eventually led to scarcity of livestock feed. However, even if the fallow land has decreased overall, farmers who have enough land still leave some fallow and sell grass from the land to other farmers. According to men's group, an average household would have 15 head of livestock with an average land holding of two hectares.

Generally the annual livestock feed calendar follows these patterns: September to December – livestock feed on grass on a fallowed land, although it is not enough to meet their feed needs. January to Beginning of March – animals are allowed to browse freely on harvested fields. They consume crop residues from barley and wheat, which are also stored in the homestead, and Enset byproducts. June – land preparation and planting begins so farm lands are not accessible and livestock movement is restricted. During this time livestock "*stand near the household, or fences*". June to September –during this period farmers send their livestock to the lowlands, a practice known locally as '*Dereba*'. However, farmers mentioned that this practice is declining due to the reduction of livestock numbers per household, livestock theft that occurs during the journey to the lowlands, livestock disease and the long distance to the lowlands. However, they mentioned that *Dereba* is still predominantly practiced by households with larger livestock numbers. (Farmers in Seriti mentioned the issue of theft, but farmers in Kolo Galan said that it although it used to be a problem in the past it is not an issue now.)

Solutions:

Women mentioned that fodder is needed for all animals, except horses and donkeys. Planting multi-purpose trees can help to provide animal fodder as well as protection for the soil. If the right multi-purpose trees can be identified and planted this could help to solve many problems.

4. Wheat disease

Farmers mentioned that, there is an outbreak of wheat disease (yellow rust) that started during last year's crop production. They explained the probable cause is the nature of the rain. When there is too much rain it causes foggy conditions during August and September. This turns the wheat plants yellow.

Solutions:

Women commented that nothing is being done to address the problem of wheat disease - the ministry of agriculture gave treatment last year but it did not address the problem because it came too late.

5. Landlessness

The men's group mentioned that there is an increasing number of youth population who are married, have households but do not own land. Men's group mentioned that the number of those households have reached 160. As a strategy they try to rent land or sharecrop, some migrate to Nazareth, Mojo, and other towns to harvest teff. Some find work as daily labourers in Addis Ababa.

Solutions:

Women mentioned the need for birth control to solve the problem of landlessness - they believe that this problem is caused by increasing population resulting in a shortage of land.

Cilanko kebele – Midstream

Number of households in the kebele (excluding 'landless' households): 480

Most important resources:

Due to the government sustainable land management campaign taking place at the time of the research it was difficult to spend sufficient time with the farmers from Chilanko. As such we shortened the exercise by excluding discussion of resources and focusing instead on problem identification and in-depth discussions.

Joint identification and ranking of problems:

In this kebele, due to the shortage of time, we identified and ranked the major problems with men and women together, rather than in separate groups by gender. The following problems were prioritized:

1. Crop disease
2. Deforestation
3. Soil erosion
4. Shortage of fodder
5. Landlessness

1. Crop disease

According to the women's group all crops are affected by crop disease, but particularly 'field crops'. Wheat and beans are most severely affected but on a seasonal basis. The men's group mentioned that they have problems with diseases on the following crops: barley and wheat (yellow rust), Faba bean (root rot), Garlic (white rot), Potato (blight), and a worm on barley that cuts it soon after emergence of the plant in August. Women believe that the crop diseases have become worse in recent years. They believe the increase in disease is caused by changing weather patterns, particularly rainfall, and deforestation. "Without trees the rains do not come on time, eucalyptus dry the land".

Male farmers mentioned that they use chemicals bought from the open market with small cups to treat some of their problems, Mancozeb, Ridomil, and 2-4D for treating the barley disease. Usually the chemicals bought in this way may or may not work. HUNDEE (local NGO) used to bring chemicals especially for wheat and barley related diseases but it is never consistent. The farmers mentioned that they have difficulty of accessing the right chemical for the right disease at the right time. Women explained that previously farmers sprayed chemicals on the crops but then their animals ate them and died. Some of the chemicals were supplied by the Bureau of Agriculture but some were bought by individuals. Farmers still spray but they now use a timetable so they are managing the crops more effectively, but the diseases are still present.

2. Deforestation

The process of deforestation in Chilanko is similar to what farmers reported in Seriti. According to female farmers the area was highly forested in the past with a range of indigenous trees. The situation changed after the fall of the Derg. At this time farmers who had been re-located under the Derg villagization program moved back to their old homes. Many indigenous trees were cleared during this movement to create new farmland. Once the trees had been cut the stumps were removed and gullies formed which increased surface runoff and caused landslides in the area. Female participants said that they did not plant trees in the past because they did not know their value and there was no tradition of preserving trees.

Issues related to Eucalyptus –specific to Chilanko

Eucalyptus became dominant in the area during the early 1990s, after the indigenous trees were cleared. There was significant movement of people during the transition period as farmers who had been re-located as part of the Derg villagization program either returned to their own homes or found new locations, for example closer to Gojo town. These farmers needed fast growing trees to construct houses and this resulted in the planting of eucalyptus which rapidly became a good source of income. Until 11 years ago, male farmers reported that eucalyptus logs were sold for just 2 Birr. The demand for eucalyptus increased as the demand for construction materials increased, and in turn this raised the price. This resulted in farmers either planting eucalyptus on their farmland or renting out their lands for eucalyptus plantations to outsiders (mainly to people from Gojo town or to people from other nearby towns with relatives in the area). Apparently farmers who shared their boundaries with these eucalyptus plantations were also forced to convert their farm to eucalyptus due to the effects on their land. Crop yields declined due to shading and the acidity of the leaves falling from trees on the neighboring farm. As a result conflicts arose between neighboring farmers. The men's group mentioned that "Eucalyptus became larger than the Government", an indication of the failure to enforce any laws to regulate land renting and eucalyptus. Female farmers report that eucalyptus has dried up the streams and the soil in the area but farmers keep planting it because of the money they can generate. Women respondents believe that the indigenous trees that were present in the past had a wider range of uses than eucalyptus as they could be used for compost, fertilizer, for constructing doors and windows in houses, and for medicine. Although eucalyptus is fast growing its uses are limited to fuel and construction.

Solutions:

The introduction of improved potato varieties to Chilanko has slowed down the growth of eucalyptus and has shifted farmers' interests towards the production of seed potato for market. This has been very lucrative for farmers in the area and a significant number of farmers in the kebele have prospered from this new crop. They have also established a potato storage house and a cooperative to market the seed potato more effectively. The male farmers mentioned that is now their intention to replace eucalyptus in the coming years with indigenous trees as the negative effects of the tree is becoming increasingly apparent. Female

farmers discussed their plans to plant indigenous trees on bunds, on farmland and around homesteads. They will apparently get the seeds from the bureau of agriculture.

3. Soil erosion

Farmers mentioned that soil erosion is caused by deforestation that has taken place since the early 1990s. Although deforestation took place in the past they are still suffering from the effects. According to the female farmers soil erosion has become more severe in the last three years and worsens during the rainy season. Male farmers report that the texture of the soil has changed and become sandy over time. They also mentioned problems of wind erosion which takes away the top soil.

Solutions:

The group mentioned about the recent sustainable land management campaign which is working to reduce soil erosion. Apparently GIZ came to the area last year and studied the past and present situation and how things have changed over time. Farmers mentioned that they have started working on terraces under the direction of the bureau of agriculture but they are also waiting for GIZ to start work in the area. They are hopeful that incentives will be provided by GIZ for the terracing works happening in the kebele. They are also hopeful more indigenous tree seedlings will be available both from the government or NGOs to strengthen the physical soil conservation structures.

4. Shortage of fodder

The men's group mentioned that farmland has expanded over the years due to increasing population numbers and declining soil fertility; this resulted in less grazing land and feed for livestock. The feed shortage has been exacerbated since the introduction of potato to the kebele. Chilanko was the first kebele in Jeldu to receive improved potato varieties. It is a major cash crop and this leads to people from Gojo town contracting land for potato production. Farmers with larger plots of land used to grow grass for sale to other farmers, however, now they choose to rent out their land for potato production as it is more lucrative. Women report that they use crop residues mixed with tella, salt and bran to feed their animals, however, there is a problem with feed availability due to the shortage of land. There is no common land for grazing in the area, only private land. Farmers report that they need animals for their livelihoods and cannot live without them so it is important to find a solution to the feed problem.

According to the group, the average livestock ownership per household is 15 heads. The annual livestock feed calendar in the kebele is as follows: June to October – livestock graze on a private crop land that is left fallow. November to January –livestock browse freely on crop residues from the harvested fields. When asked whether free grazing style would damage the new soil conservation structures, the group responded that it is the responsibility of the farmer whose plot has been terraced to protect the terraces from livestock. Livestock owners will also bear

some responsibility for keeping their livestock away from terraces. February to July – livestock browse freely during the day and receive supplementary crop residues for feed morning and night (residues are stored in every household). The second week of May to the end of the month is potato planting season. As the potato crop is grown for market farmers make sure that livestock do not damage the crop. July to September – ‘*Dereba*’ (movement of livestock to the lowlands) is practiced by farmers with a large number of stock. Those with less livestock keep their animals near the fences around their homestead to keep them away from cropland. Oxen are priority for feeding (used for ploughing), then dairy cattle and then sheep. Women currently sell butter in the local market but not milk.

Solutions:

The men and women’s groups mentioned their hopes to plant multi-purpose trees on the newly constructed terraces, which would ultimately improve the feed shortage for their livestock. They also mentioned that the trees would not only improve feed availability but they will also provide flowers for bee keeping and honey production. Additional benefits are that trees improve the rainfall pattern and the general climate of the area. They hope to see changes from the current terracing activities after five years. The men’s group also talked about their intentions to create and enforce kebele laws that will restrict the cutting of trees.

5. Landlessness

Farmers report that there are particular problems related to landlessness in Chilanko kebele. According to female farmers landlessness has been a problem for the past 20 years or so. This is mainly because the population is growing and there is less land available. Shortage of land particularly affects members of the community who are young, who have either completed or dropped out of school and are married with houses and children but who have no farm land in their name. Women respondents commented that the land is distributed unequally – some farmers have more than others. Women said that in the past people with more family members, or good relationships with those in power, got more land.

Among these people, some try to earn a living from farming through arrangements like share cropping. Others try and earn a living as daily labourers, this work includes cutting eucalyptus logs, loading logs onto trucks, harvesting potato and loading potato onto trucks. They earn roughly 20 birr per day which is not enough for their needs. According to female participants the cost of labour is increasing so land owners often prefer to do the work themselves. Cost of land rental is also increasing making it difficult for those who seek to rent land. The male farmers mainly referred to daily labourers as landless and did not count sharecroppers in this category. Those who fall into the category of daily labourers are seen as a threat because they contribute to the scarcity of resources in the area, and may turn to crime unless alternative livelihood strategies are found. Farmers admitted that there is lack of action from their side to address this problem.

Solution:

Women mentioned that a solution to the problem of landlessness is to send people away from the area to find work. Apparently many young people are migrating from the area for work at the current time. Other potential coping strategies for the landless include bee keeping (improved hives can be found in the area and people have received training from Holetta research center) and raising poultry. One man from Chilanko wanted to purchase an incubator for poultry production but could not afford it and there is no electricity. However, there are problems with bee keeping due to a lack of flowers in the area. Farmers requested multi-purpose trees that can be used for honey production. Even if they are planted on the land included in the current SLM campaign, the landless would benefit. Those who have land would also welcome the introduction of multi-purpose trees. Potato has made a great difference to the kebele but it requires more work to develop potato production further. Someone suggested a processing plant/factory that would benefit the landless. There may be opportunities for work on potato value chains in the future.

Kolu Galan kebele - Downstream

This kebele is a combination of 3 former kebeles; Melka, Kolu and Koftu

Number of households (excluding landless households) = 1687

Number of households in the Melka village (catchment area) =381

Most important resources identified by women:

Wheat, eucalyptus, potatoes, barley, small businesses, dairy products, poultry, sheep, goats, horses

Most important resources identified by men:

Water was identified as the most important resource by men, followed by livestock, land, forest and crops. Other important resources mentioned were *Idir*, schools, our health,

Problems identified by women:

Soil erosion, deforestation, changes in climate, reduction in soil fertility, land degradation, reduction in worms in the soil, lower productivity, livestock disease, frost and hail that impacts on crops, potato blight, lack of water for crops, competition over irrigation leading to water shortages, lack of water for livestock, lack of clean drinking water, lack of health station

Problems identified by men:

Plant disease (wheat, Onions, peppers, etc), livestock disease, lack of clean drinking water (human and livestock), lack of irrigation technology, shortage of feed for livestock, soil erosion, and deforestation.

Ranking of problems:

Men and women groups came together to combine their separately ranked problems

	Women	Men	Joint
1	Lack of drinking water	Deforestation	Deforestation
2	Soil erosion	Soil erosion	Soil erosion
3	Deforestation	Crop disease	Crop disease
4	Crop disease	Shortage of fodder	Shortage of fodder
5	Lack of water for livestock	Lack of irrigation technology	Lack of irrigation technology

1. Deforestation

Women commented that the area used to be covered in trees, including: 'Chalalaka', 'Lafto', 'Arboo', 'Oda', 'Gatera'. These trees were used for building houses, fences, for fuel and medicine. Some are still used for medicine today. Tree cover in Kolu Galan kebele has decreased in the recent past. Male farmers commented that the 'land to the tiller' initiative of the Derg gave farmers the opportunities to farm their own land. This led to a reduction in soil fertility. Declining productivity combined with increased population pressure resulted in the expansion of farmland into forested areas. Deforestation increased immediately after the fall of the Derg.

Due to deforestation, the men's group mentioned that they have lost the indigenous trees which they were using for construction purposes. They report that as a result of decreased tree cover the rainfall pattern has significantly changed. It used to rain till October now it stops at the beginning of September, and is very unpredictable. They also mentioned that trees used to provide valuable shade for their livestock and without the trees the animals are suffering. "We are also forced to use umbrellas for ourselves as the sun has started to get stronger." The men also mentioned that trees used to harbor wild life which they used to hunt and eat. One farmer has mentioned that it has been sixteen years since he last saw a bush buck. Decreased tree cover has exposed the soils to wind erosion and has also led to increased run-off which exacerbates soil erosion.

Solutions:

Farmers would like access to indigenous tree seedlings, they would plant them on their farmland since the indigenous trees are not acidic like eucalyptus. They also mentioned the need for fodder tree seedlings. Apparently the bureau of agriculture is establishing a tree nursery in the area which may improve their access to seeds and seedlings. Women mentioned that 'Chalaka' and 'Koso' trees will be planted in the future, as part of the soil conservation campaign. *"Now the problem has become severe, there are no trees left so we have to take action. Previously we lacked awareness and cut trees to make charcoal but now we are receiving training. Now we know that we can plant trees on farmland and they won't cause any problems, they will help by adding compost to the soil. Apart from eucalyptus any tree can be planted on farmland. Previously we did not plant trees because there were no educated people so we did not know their benefits."*

When asked about eucalyptus women said that they would not want it to be eradicated totally but rather they need advice about the right places to plant the trees. They used to plant eucalyptus on farmland because it is important for their income, but now they know that it affects the land negatively. They said that management of eucalyptus should depend on the status of the farmer in question – they believe that farmers who have large areas of land can still plant it on their land and use it to gain more income. (They seemed to be referring to issues of conflict between neighbouring farmers regarding eucalyptus, perhaps they believe that those with more land have more of a buffer from their neighbours?)

2. Soil Erosion

Women report that soil erosion is a relatively recent problem caused by deforestation. It started to be a problem in the early 1990s, but has become severe in the last 3 to 5 years. Farmers report declining soil fertility and gulley formations because of high run-off. The soil has now reached to the level where it does not produce adequate crop yields without fertilizer. Male farmers also mentioned that soil erosion is caused by traditional irrigation practices when an 'upstream' farmer diverts water to a 'downstream' farmer causing runoff and damage.

Solutions:

The men's group mentioned that they're starting to work on terraces as part of the bigger sustainable land management campaign. Male farmers commented that terraces were also constructed during the Derg time. They said that after the fall of the Derg the terraces were removed as they were not convinced by their effectiveness and the fertility of the soil was better than it is today. *"When the Derg disappeared, we destroyed everything"*. When facilitators asked whether they would do the same to the terraces they are building today, they responded that they now know the importance of terraces because the fertility of the soil has declined. They said they hope to see improvements after a year. Female farmers also reported that the government is now teaching people to build stone bunds, terraces and area enclosures. They are also urging people to plant trees and create tree nurseries according to timetables. Respondents from the women's group believe that the soil conservation work will be successful and they are positive that it will bring a great change to the area. They expect that soil erosion will be controlled within the next year, but it may take up to 5 years to see the difference from trees that are planted.

Along with the current plan of terracing farmers mentioned some of the challenges they are facing. The campaign work is organized in groups starting in the upland areas, but not all farmers are willing to work on somebody else's farm. Female farmers commented that many people do not want to participate but people are afraid and if they do not contribute to the work they are threatened with letters and stamps from the woreda. Women also referred to a lack of follow-up and support. Apparently the experts and development agents do not come back to check the progress of the work or provide sufficient technical support to farmers.

3. Crop disease

The men's group mentioned diseases on various crops including garlic, onions and wheat. The disease affecting onions has been present in the area for over 10 years. Farmers first notice symptoms on the leaves and later they find that the roots are dry. Even if they use chemicals (which they mention as 'Malathine'-looking), they do not see an improvement. They also mentioned that they experienced an epidemic of wheat disease (yellow rust) last year. This is a recent problem which they associate with the misty conditions that occur around September. Members of the women's group said that they are all affected by crop diseases – particularly 'rust' that affects wheat, and potato and onion diseases. There are treatments available for

potato but not for the other crops. Women felt this was an important problem but that land degradation is more of a priority.

4. Shortage of feed for livestock/shortage of grazing land

The group mentioned that declining soil fertility as well as increasing population has led to the expansion of farm land which has reduced the area of land available for livestock, resulting in feed shortages. In the past households used to keep large numbers of livestock but due to the problems with livestock feed the number of animals is now declining. Currently the average household in the kebele owns approximately ten head of livestock.

The annual livestock feed calendar in the kebele is as follows: September to October – livestock feed on grass found at the borders of farm land. November to December – livestock graze freely on the harvested fields. During this time animals consume crop residue from barley and wheat (which are stored by each household), and Enset byproducts. January to May/June – animals mainly feed on crop residues. July to September – livestock are sent for '*dereba*' (migration to the lowlands). Moving livestock may cost 50-75 Birr per head depending on where the animals are sent. The money covers the cost of the grass that the livestock feed on and payment for a herder (if the household has no family member to send). Similar to Seriti, *dereba* is still predominantly practiced by those households who own larger numbers of livestock. Farmers in this group did not mention livestock theft during *dereba* and seemed to think that the practice is safe.

Women from Kolu Galan mentioned that due to traditional irrigation practices they already restrict their livestock so they did not believe that there were any problems caused by unrestricted grazing. They also mentioned that everyone has a land certificate which acts as an extra incentive for them to manage their land and livestock. They crop twice per year due to traditional irrigation. Each household is responsible for their animals, children go to school in shifts and take turns to look after the livestock. If there are no children the women take care of them. People can be punished if animals go onto someone else's land, they may even be punished at woreda level.

6. Irrigation technology

There has been a long standing traditional irrigation practice in Melka village which entirely relies on the springs flowing from the mountains. However, farmers report that the amount of water flowing from the springs has declined over the years as more upstream users have diverted the water. The male group talked about the need for improved irrigation technology, like pumps, that would enable them to use water from the Melka River instead. They said that they need support to find the right technology. They also mentioned the difficulty of using Melka as the river forms gullies along the embankments every summer.

Lack of drinking water for people and animals

Women mentioned problems with the shortage of drinking water in their kebele, but this was not prioritized during the joint ranking exercise. Apparently this is a long standing issue that affected the whole area, but there have recently been improvements in other kebeles. Water quality is an issue in the kebele rather than water quantity, there are particular problems with typhoid. Women believe that the poor water quality is caused by water being channeled through other people's land for irrigation (people use the irrigation water for drinking). Apparently in other kebeles there are purification systems using tankers and chlorine. A tanker has now been installed in Kolu Galan kebele but it is not yet in use. This may be the reason why the problem was not chosen in the final list of problems.

Women also mentioned lack of drinking water for animals. Apparently there has been a problem for a long time. They also mentioned problems with leeches. The government is helping to provide drinking water which is treated with chemicals (chlorine), once they have collected enough water for their own needs they can use the water for their animals.



Soil conservation work, Jeldu



Farmers undertaking soil conservation work, Jeldu



Development Agent mobilizing farmers in Jeldu

General observations

		Seriti	Chilanko	Kolu Galan
Priority Issues	1.	Soil erosion	Crop disease	Deforestation
	2.	Deforestation	Deforestation	Soil erosion
	3.	Shortage of fodder	Soil erosion	Crop disease
	4.	Wheat disease	Shortage of fodder	Shortage of fodder
	5.	Landlessness	Landlessness	Lack of irrigation technology

The top ranked issues between the three Jeldu kebeles were soil erosion, deforestation, crop disease, and lack of animal fodder. The issues of soil erosion and deforestation were mentioned consistently across the three kebeles. This may be largely due to the fact that sustainable land management/watershed campaign work is currently taking place in the woreda. It was clear from participant responses that community members have recently received training on these issues as they are priorities for local and national government. The fact that community members are ranking these as priority issues does not necessarily mean that they are invested in changing current practices. Although community responses may have been influenced by the training they have received, soil erosion is obviously a serious problem for the area. Research reports seem to confirm anecdotal evidence from farmers regarding the loss of indigenous trees and the rapid increase of eucalyptus as the dominant tree species. These patterns correspond to regime changes and related policy shifts. Discussions with community members indicate that they feel a sense of responsibility for mismanagement of the natural resources in their area. This may have been reinforced by recent 'sensitization' trainings. Farmers consistently spoke of their former 'ignorance' and the need to remedy their past mistakes by 'doing their duty' and participating in the current 'Sustainable Land Management' campaign. This campaign has been inspired by activities in Tigray and is being rolled out across Oromia, Amhara and SNNPR. Plans are being passed from woreda to kebele leaders who then mobilize community members at gott level. With the help of Development Agents, kebele leaders identify 500 hectares within their kebele for interventions. Although the plans are impressive and the interventions are timely, in contrast to the Tigray model there is little in the way of

incentives for community members. (Although farmers mention that incentives may be provided by GIZ).

It seemed that farmers involved in the focus group discussions were often repeating information that they had received from 'sensitization' trainings. Focus group discussions were monitored by kebele chairmen and woreda staff, including Development Agents. The participating community members were aware of their presence which may have influenced their responses. Focus group participants in all three kebeles tended to agree with the person who was most vocal in the group. In most kebeles this person seemed to be a farmer who had recently participated in government trainings, and are likely to be model farmers. In Kolu Galan woreda staff commented on how 'clever' the women were in their responses. There is a sense that these exercises were a bit of a performance and it is therefore difficult to assess the extent to which the problems prioritized by farmers are genuinely reflective of the issues they face.

Despite farmers reported commitment to the sustainable land management campaign, farmers 'lack of awareness' and active participation is one of the main challenge mentioned by Development Agents. However, only a few farmers are trained and DAs tend to pick model farmers or well-off farmers. Farmers report that no incentives are given for the work, and appropriate equipment and materials are not provided. Farmers also complain about the timing of the work as it is taking place during the harvest period. The interventions require a large amount of labour and as it is taking place in the dry season they are working with dry earth which is hard to manage. Apparently richer farmers are not turning up for the work, particularly the potato farmers who travel outside their kebele for business. These farmers are happy for the work to take place on their land but the poorer farmers are left to bear the burden of implementation.

Next Steps

Community members in Jeldu seem to be enthusiastic about the campaign work, and are spurred on by the need for change. This is positive, but concerns were expressed by community members and government staff alike that there are not enough resources to achieve the intended goals. The soil conservation measures are due to be planted with fodder plants and multi-purpose trees; however, there is a lack of budget to supply the necessary seeds and seedlings. It will be vital for the success of the work for the physical structures to be planted; otherwise they are likely to be washed away during the next heavy rains. This will impact heavily on the morale of the community, and may affect the success of future NRM activities.

There are also potential issues regarding the sustainability of the approach, planting trees will only be successful in certain parts of the woreda if livestock movements can be controlled. This concern was highlighted in the base line research report. This will require coordination and cooperation on the part of community members which will require local facilitation. Different areas of the woreda have different livestock management approaches which present opportunities, for example in Kolu Galan where traditional irrigation is being practiced livestock are fed via cut and carry systems and their movements are restricted. It may be possible for community members from Kolu Galan to share their experience with other kebeles.

In addition community members should be consulted about their needs and presented with a range of relevant choices in terms of multi-purpose trees and fodder. During discussions with farmers the loss of indigenous trees was identified as an issue and many mentioned conflict over eucalyptus, which some feel has an impact on crop land and water availability. A few farmers also mentioned that government staff are currently trying to persuade them to remove eucalyptus from their land, which meets resistance due to the importance of eucalyptus as a cash crop. One farmer said *“if there was no eucalyptus in Jeldu, there would be no people in Jeldu”*. It will be very difficult to eradicate eucalyptus from the system in a rapid time-frame. If this is going to be attempted alternatives should be provided that are both environmentally appropriate and meet local people’s needs.

There appear to be problems relating to equity of both the implementation and impact of interventions that will need to be addressed if the SLM work is to be sustainable. Based on informal discussions with farmers it seems that rich farmers and those with more land will either directly benefit from the campaign work or will not be adversely affected. Richer farmers (i.e. potato farmers) reportedly have more weight in the community and can by-pass the campaign requirements. Poorer farmers have little choice in terms of their participation as they are more easily controlled; they are also more affected by the demands of the work. The needs of different farmers should be considered, and appropriate incentives identified. For example, landless farmers from Chilanko kebele who are participating in the campaign work requested trees for honey production, which is a possible source of income. They said that even though they have no land included in the scheme if such trees are provided they can still benefit.

However, this narrative may not be based on farmer demands but rather repetition of current government proposals.

Land certification has taken place in Jeldu and this seems to have made a difference as it gives farmers more security over their land. This may also make them more likely to invest in natural resource management strategies, including tree planting. So far it seems that indigenous trees are mainly being planted around people's homesteads, partly due to connections with local traditions. Tree nurseries have been established at local level but it will not be enough to simply distribute plants; farmers also need training on how to produce and manage them otherwise there is a danger that they will be under-utilized or mismanaged. Experience shows that community members, and other local stakeholders, need to feel a sense of ownership in terms of planning and implementation. There is possibly scope for developing farmer-managed tree nurseries for those with small land holdings, which could also potentially provide a source of income, if there is sufficient demand.

These challenges could present opportunities for the NBDC project, particularly the innovation platform work. There has been a concern that IPs will not work if they do not lead to action on the ground, they cannot simply be 'talking shops', but there is lack of project budget for implementation. Therefore it makes sense for the NBDC to coordinate with government initiated action in the selected sites and use the action research activities to address gaps that have been identified. This could include providing research results and assisting with capacity development, knowledge brokering and facilitating stakeholder linkages. ILRI could potentially play a role in helping to identify suitable fodder plants and ICRAF has already conducted research in the area to identify appropriate local tree species that could be promoted.

It would be useful to explore methods that could assist government representatives (particularly Development Agents) to better match interventions to appropriate locations in the landscape, and to consider the needs of different socio-economic groups. There is a need for tools and methods that can assist local actors to consider interactions between different parts of the landscape (i.e. upstream/downstream issues). NBDC researchers involved with innovation platforms are also planning to use participatory approaches such as mapping, 3D modeling and land use planning to facilitate dialogue between stakeholders at different levels. Local NGOs could be involved in implementation. If these activities are well planned and coordinated, they could play a significant role in ensuring longer term sustainability of the current interventions.

Further reading

Ludi, E. et al. (2013) *Rhetoric and realities: a diagnosis of rainwater management development processes in the Blue Nile Basin of Ethiopia*. Colombo, Sri Lanka: CGIAR Challenge Program on Water and Food (CPWF). 58p. (CPWF Research for Development (R4D) Series 5).

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